

Landscape Conservation Cooperatives and the Pacific Islands Climate Change Cooperative (PICCC)



The reality of climate change and its potential impacts on natural landscapes and species presents some looming challenges to the conservation community. To meet these challenges, and help conservationists and landscape managers respond adaptively to them, the U.S. Fish and Wildlife Service (FWS) has initiated the development of Landscape Conservation Cooperatives (LCCs). The LCCs are public-private partnerships for addressing landscape scale stresses on natural resources. They are supported by a network of eight Climate Science Centers (CSCs)

throughout the county providing climate monitoring data for LCC use.

LCC follow the JV partnership model, but with a multi-taxa purpose that is broader than the “all bird” focus of existing JVs. To solidify this broader approach, the FWS developed a national geographic framework by integrating existing boundaries of Bird Conservation Regions with Freshwater Ecoregions. The result is 22 geographic areas covering the entire country that will be the spatial reference for developing LCC capacity. These boundaries largely follow aggregated Bird Conservation Region/JV boundaries and provide an opportunity for JV-LCC synergy.

The function of the LCCs will be to generate and deliver scientific data, analyses, and tools to inform conservation in the face of climate change impacts. They will provide a forum for partners to coordinate their landscape scale conservation programs, facilitating communication between scientists and resource managers to address conservation priorities.

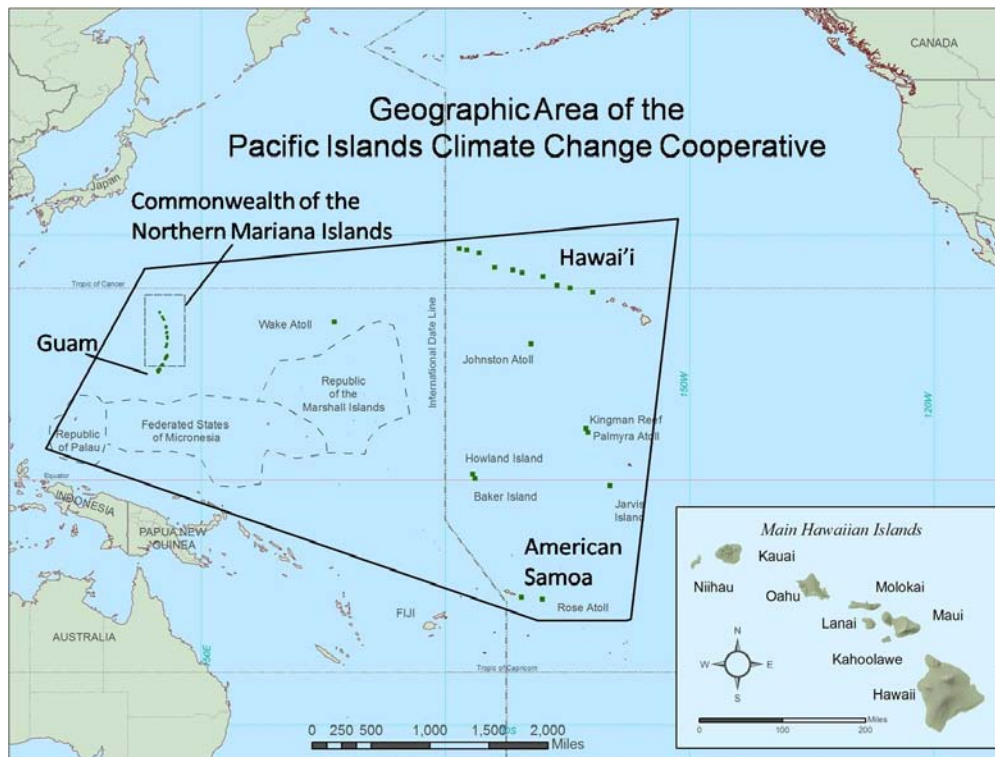
LCCs are applied conservation science partnerships that will reflect the principles and practices of adaptive management. The capacity of each LCCs will be designed to be compatible with that of other LCCs. Core staff will include the same general types of science expertise and skills across LCCs. Thus all LCCs will be self-directed partnerships with governance, structure, and operation consistent so that they function as units of an integrated network.

The U.S. Fish and Wildlife Service, and other DOI bureaus, will play key leadership and catalyst roles in developing and operating LCCs by providing funding and other resources to assist new LCCs with establishment. Over time the LCCs will strive to be self-sustaining, with partners and

staff expanding the resources needed to build and maintain the conservation work. Each LCC partnership will jointly determine the priority species of focus and the associated management challenges to be addressed in biological plans and conservation designs for their locale.

The unique role of the LCCs is to provide a clear focus on climate change modeling and adaptive conservation design with solid management decision-support tools and evaluation of resource monitoring data. All products and services will be shared openly among partners and other interested parties for conservation.

Climate Science Centers will provide the latest climate science information to the LCCs and help them develop modeling tools and conduct site-specific studies of climate impacts on species and habitat response. The LCCs will use this information to develop landscape-scale conservation plans that will inform conservation delivery activities and assist partners with management decisions and conservation actions. In turn, LCCs will provide Climate Science Centers with information on species and ecosystem responses to climate change and the effectiveness of conservation actions. *(Continued on next page)*



The first LCC to be established, in late 2009, was the Pacific Islands Climate Change Cooperative (PICCC). The PICCC shares no boundary with any other LCC in the nation. Its boundaries are defined by the major inhabited island groups under U.S. jurisdiction within the Pacific Basin; including the State of Hawai'i, the Mariana Islands, Guam, and American Samoa.

Ecologically rich, this area covers 2,300 islands, 6,500 miles of coastline, and over 90% of U.S. coral reefs. It contains thousands of endemic species and unique ecosystems of global significance (e.g. 9 of the earth's 14 biomes are found within the islands of Hawai'i.) There are 458 listed species, 69 candidate species, 21 National Wildlife Refuges, 4 Marine National Monuments, 11 National Park units, and 2 National Marine Sanctuaries.

Climate change has already arrived in the Pacific. Temperature is rising at a faster rate in higher elevations than elsewhere, affecting remaining native forest ecosystems. Precipitation is declining, affecting already dry leeward island areas. Rising sea surface temperatures are causing episodes of coral bleaching, which will be exacerbated by ocean acidification,. And the low elevation (<40 feet above sea level) of most of the Pacific Islands makes them highly vulnerable to rising sea levels and storm damage.

The PICCC will provide a range of scientific and technical tools to help managers in Hawaii and the Pacific Islands make conservation decisions on these issues. To begin, PICCC will downscale existing climate change models for island application in predicting local resource response to climate change. PICCC will assess management options using these models and historical data to determine priority conservation strategies. Ecological models and management actions will be validated with research and monitoring. The PICCC partnership will provide a forum for continuous information exchange, feedback, and revision between managers, researchers, and agencies.

For more details on the PICCC visit <http://hawaiiconservation.org/climatechange.asp>
You can also visit <http://www.fws.gov/pacificislands/index.html>
Information about the LCCs can be found at <http://www.fws.gov/science/SHC/>